

REMARKS

The pending Office Action addresses claims 1-29, rejecting claims 1-14 and 16-29, and objecting to claim 15.

Drawings

The Examiner indicated that the drawings were not in compliance with 37 CFR 1.121(d) because the figures were dark and references numbers were hand written. New drawings were filed by the Applicant on October 13, 2005.

Amendments to the Claims

Applicant amends independent claim 12 to specify that the bone engaging surface feature formed on the elongate body of the suture anchor is longitudinally extending. Support for this amendment can be found at page 4, lines 28-29 and page 5, lines 1-2. Applicant also adds new claim 30, which includes the limitations of claim 12 and allowable claim 15. No new matter has been added.

Claim Rejections Pursuant to 35 U.S.C. §102(b)

U.S. Publication 2002/0161401 to Steiner

The Examiner rejects claims 1-8, 10, 11 and 21-29 pursuant to 35 U.S.C. § 102(b) as being anticipated by U.S. Publication 2002/0161401 to Steiner (“Steiner”). Applicant respectfully disagrees.

Independent claim 1 recites a suture anchor system for anchoring tissue to bone including an elongate body, a continuous suture-receiving channel, and a first loop of suture. The substantially solid elongate body has proximal and distal ends with a longitudinal axis extending therebetween and at least one longitudinally extending bone-engaging surface feature formed thereon. The continuous suture-receiving channel extends distally from opposed sides of the proximal end of the body around the distal end of the body and is adapted to seat a suture therein. A first loop of suture thread is

freely-slidably disposed around the elongate body within at least one suture-receiving channel.

Steiner fails to disclose a suture anchor having a longitudinally extending bone-engaging surface feature formed thereon. Steiner teaches a suture anchor having a cylindrical body portion with an inwardly tapered distal end portion, screw threads extending along the cylindrical body portion, and parallel longitudinal grooves cut into the cylindrical body interrupting opposed portions of the screw threads. (Steiner page 3, lines 16-29). As shown in Figure 1, the screw threads (18) or bone-engaging surface features extend laterally and are intersected by the longitudinally extending suture grooves (20). Steiner only teaches laterally extending screw threads and fails to teach or suggest that the bone-engaging surface features can extend longitudinally as required by claim 1. Thus, claim 1 is not anticipated by Steiner.

Independent claim 21 recites a method for anchoring suture in bone that includes providing a suture anchor having a generally elongate body with proximal and distal ends and at least one longitudinally extending bone-engaging surface feature formed thereon, a suture-receiving member formed on at least a portion of the body, and a suture loop extending around at least a portion of the body and positioned in the suture-receiving member. An operative suture is also provided. The method also includes forming a bone cavity within a bony structure and passing the operative suture through the proximal portion of the suture loop. The suture anchor is implanted in the bone cavity such that the operative suture extends from the cavity and is freely slidable with respect to the suture loop.

Steiner fails to disclose a method for anchoring suture in bone that includes passing an operative suture through a suture loop as required by claim 21. Steiner teaches loading a single piece of suture into the cavity of the suture anchor, pulling the suture taut along the channel of the suture anchor, and attaching the suture to soft tissue. (Steiner page 3, paragraph [0038]). In contrast, claim 21 requires passing the operative suture through a suture loop positioned in the suture-receiving member of the suture anchor. Steiner does not teach or even suggest such a step. Thus, claim 21 is not anticipated by Steiner.

Accordingly, independent claims 1 and 21, as well as claims 2-8, 10-11, and 22-29 which depend directly or indirectly therefrom, distinguish over Steiner and represent allowable subject

matter.

U.S. Patent 5,957,924 to Tormala et al.

The Examiner rejects claims 1-8, 10-14, 16, 17, 19, and 20-29 pursuant to 35 U.S.C. § 102(b) as being anticipated by U.S. Patent 5,957,924 to Tormala et al. (“Tormala”). Applicant respectfully disagrees.

As explained above, independent claim 1 recites a suture anchor system including a suture anchor having at least one longitudinally extending bone-engaging surface feature formed thereon. Independent claim 12 similarly recites a suture anchor adapted to be disposed within bone including an elongate body, a transversely-extending suture tunnel, first and second opposed suture-receiving channels, and a suture loop. The elongate body has at least one discrete longitudinally extending bone-engaging surface feature formed thereon and adapted to engage bone.

Tormala fails to disclose a suture anchor having a longitudinally extending bone-engaging surface feature formed thereon. Tormala teaches a tool for installing “a threaded, screw-in type suture anchor or a barbed, press-in type suture anchor.” (Tormala column 3, lines 47-50). Figure 1A shows the threaded suture anchor operatively mounted on the installation tool, and Figure 4 shows the barbed, press-in type suture anchor mounted on the installation tool. (Tormala column 4, lines 21-36; column 6, lines 61-67; column 7, lines 1-10; Figures 1A and 4). In each figure, the bone-engaging surface features, whether threads or barbs, are shown extending laterally from the elongate body of the suture anchor. Tormala only teaches laterally extending screw threads or barbs and fails to teach or suggest that the bone-engaging surface features can extend longitudinally as required by claims 1 and 12.

As explained above, independent claim 21 recites a method for anchoring suture in bone whereby the operative suture is passed through a suture loop positioned in the suture-receiving member of the suture anchor. Tormala fails to disclose a method for anchoring suture in bone that includes passing an operative suture through a suture loop. Tormala teaches a tool for installing “a threaded, screw-in type suture anchor or a barbed, press-in type suture anchor.” (Tormala column 3, lines 47-50). In Tormala, the two free ends of a single segment of suture are guided along the

grooves formed in opposite sides of the suture anchor. (Tormala column 5, lines 9-16). Tormala does not disclose a suture loop nor does it teach passing the operative suture through the loop. Thus, claim 21 is not anticipated by Tormala.

Accordingly, independent claims 1, 12, and 21, as well as claims 2-8, 10-11, 13-14, 16-17, 19-20, and 22-29 which depend directly or indirectly therefrom, distinguish over Tormala and represent allowable subject matter.

Rejections Pursuant to 35 U.S.C. §103(a)

The Examiner rejects claims 9 and 18 pursuant to 35 U.S.C. § 103(a) as being obvious over Steiner or Tormala. The Examiner asserts that although Steiner and Tormala “fail to teach wherein the at least one longitudinally extending bone-engaging surface feature comprises at least one discrete pyramid-shaped surface feature,” it would have been obvious to one of ordinary skill in the art to “make the longitudinally extending bone-engaging surface feature of Steiner or Tormala et al. a discrete pyramid-shape because the shape of the bone-engaging surface is a mere design choice and that any shape would perform equally well.” Applicant respectfully disagrees.

It would not have been obvious to a person having ordinary skill in the art to modify the suture anchor of Steiner or Tormala to include pyramid-shaped surface features, much less any type of longitudinally-extending surface features, because such a modification is *contrary* to the teachings of Steiner and Tormala. Both Steiner and Tormala teach suture anchors having threads formed thereon for threading the suture anchor into bone. The use of any type of longitudinally-extending surface feature would inhibit rotation of the threaded suture anchor. In fact, longitudinally-extending surface features may damage the bone, preventing a secure fit between the suture anchor and the bone. Applicant has discovered that suture anchors with longitudinally extending bone-engaging surface features are easier to install and provide greater stability than those with laterally extending surface features. The longitudinally extending surface features provide a sleeker more streamlined entry than those suture anchors that include laterally extending surface features. Additionally, Applicant’s suture anchors provide greater stability because the longitudinal surface features create less disruption in the pre-drilled bone hole during insertion resulting in a tighter more secure fit. Thus, claims 9 and 18 are not obvious in view of Tormala and Steiner and therefore represent

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allowable subject matter.

Allowable Subject Matter

The Examiner objects to claim 15 as being dependent upon a rejected base claim. The Examiner notes that claim 15 would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims. New independent claim 30 has been added and includes the limitations of claims 12 and 15. Applicant believes new independent claim 30 is in condition for allowance.

Conclusion

In conclusion, Applicant submits that all pending claims are now in condition for allowance, and allowance thereof is respectfully requested. The Examiner is encouraged to telephone the undersigned attorney for Applicant if such communication is deemed to expedite prosecution of this application.

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Respectfully submitted,

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